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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,499	03/01/2004	Richard Mapp	53467-5018	7443
9629	7590	09/11/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			LANG, AMY T	
			ART UNIT	PAPER NUMBER

1714

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,499

Applicant(s)

MAPP, RICHARD

Examiner

Amy T. Lang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☒ Claim(s) 5,6,9 and 25 is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11-5-04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 1 and 27 recite a metal compound "reactable with at least one carboxylic acid moiety in the unsaturated fatty acid." However, it is the examiner's position that this claimed material is not disclosed in the specification.

2. The disclosure is objected to because of the following informalities: paragraph [0005], line 1 includes the phrase "herein at particular" where it is the examiner's position that this should be replaced with "herein are particular."

Appropriate correction is required.

3. The disclosure is objected to because of the following informalities: paragraph [0009], line 2 includes the phrase "an aqueous solutions" where it is the examiner's position that this should be replaced with "an aqueous solution."

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: paragraph [0054], line 6 includes the phrase "aliphatic group" where it is the examiner's position that this should be replaced with "aliphatic groups."

Appropriate correction is required.

5. The disclosure is objected to because of the following informalities: paragraph [0067] includes a duplicate "about" in line 3.

Appropriate correction is required.

Claim Objections

6. Claims 5 and 6 are objected to because of the following informalities: Claims 5 and 6 recite the phrase "of a polymeric beads" where it is the examiner's position that this should be replaced with "of a polymeric bead."

Appropriate correction is required.

7. Claim 9 is objected to because of the following informalities: claim 9 includes the phrase "potassium, and lithium, magnesium" where it is the examiner's position that this should be replaced with "potassium, lithium, magnesium."

Appropriate correction is required.

8. Claim 25 objected to because of the following informalities: claim 25 is dependent from the "method of claim 25" which should be corrected to "claim 24."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1, 6, 9, 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayborn (US 2004/0138067 A1) in view of Malchow (US 5,807,811), Adams (US 5,700,767), and Albright (US 6,451,953 B1).

Rayborn discloses a lubricant composition that is utilized as an additive to a drilling fluid ([0012]). The composition is comprised of a carrier fluid, graphite, and additives ([0012]). The carrier fluid is further disclosed as oil, including corn oil and soybean oil, and is present in the lubricating composition from 50 to 98 wt% ([0012], [0013], [0038]). The graphite is present from 2 to 50 wt%, which clearly overlaps the instantly claimed 0.1 to 5 wt% ([0013]). The additives include potassium hydroxide, sodium hydroxide, barium sulfate, and calcium carbonate, which encompass the instantly claimed Group I and Group II metals ([0014]). Additional additives in the

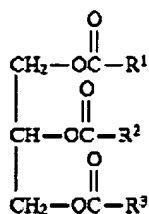
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composition include copolymer beads of styrene and divinylbenzene with a size between 100 microns to 900 microns ([0036]). These polymeric beads are present in the lubricating composition from 2 to 50 wt% ([0013]).

Additionally, Rayborn discloses a method to lubricate a wellbore wherein the disclosed lubricant composition is added to a drilling fluid in amount from 1 to 99 wt% ([0005], [0006], [0021]).

Rayborn does not disclose (i) triglycerides in the composition, (ii) the suspension agent comprising a film forming amine and the total wt % of the suspension agent, (iii) the mesh size of the polymeric beads and the pounds of polymeric beads per barrel of lubricant, (iv) less than 2 wt% of resin acids, unsaponifiables, and saturated fatty acids and free of aromatics, cadmium, and lead.

With respect to (i) above, although Rayborn does not specifically disclose the composition comprised of triglycerides, Rayborn does disclose corn oil and soybean oil. Malchow discloses a naturally occurring triglyceride of the formula



where R¹, R², and R³ are independently unsaturated hydrocarbyl groups containing about 7 carbon atoms (column 4, lines 18-32). This leads to a total of about 27 carbon atoms for the reference triglyceride. It is the examiner's position that about 27 overlaps the instantly claimed 16 to 26 carbons atoms (*In re Wertheim*, 541 F.2d 257, 191 USPQ

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90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (The prior art taught carbon monoxide concentrations of "about 1-5%" while the claim was limited to "more than 5%." The court held that "about 1-5%" allowed for concentrations slightly above 5% thus the ranges overlapped.). Malchow further discloses that natural triglycerides encompass corn oil and soybean oil. Therefore, since Rayborn discloses the lubricating composition comprised of corn oil and soybean oil and Malchow teaches that these oils include specific triglycerides having between 16 and 26 carbon atoms, it would have been obvious for Rayborn to also utilize these specific triglycerides in the lubricating composition.

With respect to (ii) above, Adams also discloses a lubricating composition additive to a drilling fluid (column 1, lines 7-9). The additive composition comprises a film forming amine known as Arcor 233 in an amount from 20 to 80 wt% (column 2, lines 53-61). The Arcor 233 clearly overlaps the instantly claimed amine as given by the evidence in the instant specification ([0054] of the instant specification). This amine coats the metal surface of the drilling well and also acts as a corrosion inhibitor (column 2, lines 53-61). This is advantageous to a lubricant when applied to a drilling well, since it helps reduce mechanical drag (column 1, lines 49-58). Furthermore, Rayborn teaches that an ideal drilling fluid functions when all the lubricant is deposited on the wall cake, which a film forming amine aids in accomplishing ([0007]). Therefore, since the disclosed Arcor 233 is an advantageous additive to a drilling well lubricant, it would have been obvious for Rayborn to also utilize this additive in the lubricating composition.

The combination of Rayborn and Adams disclose a metal compound and a film forming amine, which comprise the instantly claimed suspension agent, wherein the amine is present from 20 to 80 wt%. Therefore, although Rayborn does not specifically disclose the wt% of metal compound in the lubricant, the total suspension agent is still more than 20 wt% given the disclosed amount of amine by Adams.

With respect to (iii) above, Rayborn discloses the polymeric beads with a size from 100 to 900 microns. Albright discloses that polymeric beads with a size from 250 to 1190 microns correspond to a 16 to 60 mesh (column 7, line 59 through column 8, line 1). Therefore, given the evidence supported by Albright, Rayborn clearly overlaps the instantly claimed range of 40 to 100 mesh.

Since Rayborn only discloses the average polymeric bead size from 100 to 900 microns, it would have been obvious to utilize polymeric beads with 30% less than 150 microns and 5% greater than 350 microns.

Furthermore, Rayborn discloses the polymeric beads in an amount from 2 to 50 wt% of the lubricant composition. Since Rayborn discloses the amount of beads in wt% and the instantly claimed range is given in pounds of beads per barrel of lubricant, given that Rayborn does not give a conversion formula, it is estimated that the amount of beads instantly claimed is equivalent to 3.9 and 19.3 wt%. This conversion is based on the relationship between barrel of oil and lb of oil, namely $1 \text{ barrel of oil/day} = 0.00129 \text{ acre*foot/day}$; $1 \text{ lb/day} = 4.97 \times 10^{-7} \text{ acre*foot/day}$; therefore $1 \text{ barrel oil/day} = 1.29 \times 10^{-4} / 4.97 \times 10^{-7} \text{ lb/day} = 259 \text{ lb/day}$ (Online Unit Converter). Therefore the range of 10 to 50 lb/barrel is determined to be equal to 3.9 to 19.3 wt% by the conversion

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$10/259 \times 100\% = 3.9$ and $50/259 \times 100\% = 19.3$). Based on the above estimated calculation, it is therefore the examiner's position that the amount of polymeric beads disclosed by Rayborn of 2 to 50 wt% overlaps the instantly claimed range of 3.9 to 19.3 wt%.

With respect to (iv) above, the instantly claimed resin acids, unsaponifiables, saturated fatty acids, aromatics, cadmium, and lead are disclosed in such small amounts so that they correspond to impurities in the composition. Therefore, since Rayborn does not disclose of such impurities in the composition, it would have been obvious to contain less than 2 wt% of the compounds in the lubricating composition disclosed by Rayborn.

12. Claims 1-9, and 11-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayborn (US 2004/0138067 A1) in view of Makino (US 4,636,323), Adams (US 5,700,767), and Albright (US 6,451,953 B1).

Rayborn discloses a lubricant composition that is utilized as an additive to a drilling fluid ([0012]). The composition is comprised of a carrier fluid, graphite, and additives ([0012]). The carrier fluid is further disclosed as fatty acids, and is present in the lubricating composition from 50 to 98 wt% ([0012], [0013], [0038]). The graphite is present from 2 to 50 wt%, which clearly overlaps the instantly claimed 0.1 to 5 wt% ([0013]). The additives include potassium hydroxide, sodium hydroxide, barium sulfate, and calcium carbonate, which encompass the instantly claimed Group I and Group II metals ([0014]). Additional additives in the composition include copolymer beads of styrene and divinylbenzene with a size between 100 microns to 900 microns ([0036]).

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These polymeric beads are present in the lubricating composition from 2 to 50 wt% ([0013]).

Additionally, Rayborn discloses a method to lubricate a wellbore wherein the disclosed lubricant composition is added to a drilling fluid in amount from 1 to 99 wt% ([0005], [0006], [0021]).

Rayborn does not disclose (i) the fatty acids as having between 16 and 26 carbon atoms, (ii) the suspension agent comprising a film forming amine and the total wt % of the suspension agent, (iii) the mesh size of the polymeric beads and the pounds of polymeric beads per barrel of lubricant, (iv) less than 2 wt% of resin acids, unsaponifiables, and saturated fatty acids and free of aromatics, cadmium, and lead.

With respect to (i) above, Makino discloses a fatty acid utilized in a lubricating composition having from 12 to 24 carbon atoms (column 2, lines 39-46). Since Rayborn does not disclose a specific fatty acid and Makino teaches it is known in the lubricant to utilize fatty acids having 12 to 24 carbon atoms, it would have been obvious for Rayborn to also utilize this specific fatty acid.

With respect to (ii) above, Adams also discloses a lubricating composition additive to a drilling fluid (column 1, lines 7-9). The additive composition comprises a film forming amine known as Arcor 233 in an amount from 20 to 80 wt% (column 2, lines 53-61). The Arcor 233 clearly overlaps the instantly claimed amine as given by the evidence in the instant specification ([0054] of the instant specification). This amine coats the metal surface of the drilling well and also acts as a corrosion inhibitor (column 2, lines 53-61). This is advantageous to a lubricant when applied to a drilling well, since

it helps reduce mechanical drag (column 1, lines 49-58). Furthermore, Rayborn teaches that the ideal drilling fluid is when all the lubricant is deposited on the wall cake, which a film forming amine aids in accomplishing ([0007]). Therefore, since the disclosed Arcor 233 is an advantageous additive to a drilling well lubricant, it would have been obvious for Rayborn to also utilize this additive in the lubricating composition.

The combination of Rayborn and Adams disclose a metal compound and a film forming amine, which comprise the instantly claimed suspension agent, wherein the amine is present from 20 to 80 wt%. Therefore, although Rayborn does not specifically disclose the wt% of metal compound in the lubricant, the total suspension agent is still more than 20 wt% given the disclosed amount of amine by Adams.

With respect to (iii) above, Rayborn discloses the polymeric beads with a size from 100 to 900 microns. Albright discloses that polymeric beads with a size from 250 to 1190 microns correspond to a 16 to 60 mesh (column 7, line 59 through column 8, line 1). Therefore, given the evidence supported by Albright, Rayborn clearly overlaps the instantly claimed range of 40 to 100 mesh.

Since Rayborn only discloses the average polymeric bead size from 100 to 900 microns, it would have been obvious to utilize polymeric beads with 30% less than 150 microns and 5% greater than 350 microns.

Furthermore, Rayborn discloses the polymeric beads in an amount from 2 to 50 wt% of the lubricant composition. Since Rayborn discloses the amount of beads in wt% and the instantly claimed range is given in pounds of beads per barrel of lubricant, given that Rayborn does not give a conversion formula, it is estimated that the amount of

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beads instantly claimed is equivalent to 3.9 and 19.3 wt%. This conversion is based on the relationship between barrel of oil and lb of oil, namely 1 barrel of oil/day = 0.00129 acre*foot/day; 1 lb/day = 4.97×10^{-7} acre*foot/day; therefore 1 barrel oil/day = $1.29 \times 10^{-4} / 4.97 \times 10^{-7}$ lb/day = 259 lb/day (Online Unit Converter). Therefore the range of 10 to 50 lb/barrel is determined to be equal to 3.9 to 19.3 wt% by the conversion $10/259 \times 100\% = 3.9$ and $50/259 \times 100\% = 19.3$). Based on the above estimated calculation, it is the therefore the examiner's position that the amount of polymeric beads disclosed by Rayborn of 2 to 50 wt% overlaps the instantly claimed range of 3.9 to 19.3 wt%.

With respect to (iv) above, the instantly claimed resin acids, unsaponifiables, saturated fatty acids, aromatics, cadmium, and lead are disclosed in such small amounts so that they correspond to impurities in the composition. Therefore, since Rayborn does not disclose of such impurities in the composition, it would have been obvious to contain less than 2 wt% of the compounds in the lubricating composition disclosed by Rayborn.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rayborn (US 2004/0138067 A1) in view of Malchow (US 5,807,811) or Makino (US 4,636,323) and Adams (US 5,700,767), Albright (US 6,451,953 B1), and Vinci (US 5,213,697).

The combination of Rayborn, Malchow, Adams, and Albright, as discussed in paragraph 11 and incorporated here by reference, disclose a lubricating additive to a drilling fluid comprised of triglycerides, a metal compound, a film forming amine, and polymeric beads.

The combination of Rayborn, Makino, Adams, and Albright, as discussed in paragraph 12 and incorporated here by reference, disclose a lubricating additive to a drilling fluid comprised of fatty acids, a metal compound, a film forming amine, and polymeric beads.

Rayborn does not specifically disclose the metal ratio of the calcium carbonate metal compound.

Vinci discloses a calcium carbonate with a metal ratio of 4.5 (column 4, lines 1-20). Therefore, since Rayborn generically discloses a calcium carbonate but is silent as to the metal ratio and Vinci discloses that it is known to have a calcium carbonate with a metal ratio of 4.5, it would have been obvious for Rayborn to utilize this specific calcium carbonate.

14. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayborn (US 2004/0138067 A1) in view of Malchow (US 5,807,811) or Makino (US 4,636,323) and Adams (US 5,700,767), Albright (US 6,451,953 B1), and Suman (US 3,756,315).

The combination of Rayborn, Malchow, Adams, and Albright, as discussed in paragraph 11 and incorporated here by reference, disclose a lubricating additive to a drilling fluid comprised of triglycerides, a metal compound, a film forming amine, and polymeric beads.

The combination of Rayborn, Makino, Adams, and Albright, as discussed in paragraph 12 and incorporated here by reference, disclose a lubricating additive to a

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drilling fluid comprised of fatty acids, a metal compound, a film forming amine, and polymeric beads.

Rayborn does not specifically disclose the drilling fluid as an aqueous oil-based drilling mud.

Suman discloses that drilling fluids encompass aqueous drilling muds (column 7, lines 62-63). Therefore, since Rayborn generically discloses an oil-based drilling fluid and Suman teaches that drilling fluids encompass drilling muds, it would have been obvious for Rayborn to specifically utilize an aqueous oil-based drilling mud.

15. Claims 22 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayborn (US 2004/0138067 A1) in view of Makino (US 4,636,323), Adams (US 5,700,767), Albright (US 6,451,953 B1), and Hernandez (US 5,883,054).

The combination of Rayborn, Makino, Adams, and Albright, as discussed in paragraph 12 and incorporated here by reference, disclose a lubricating additive to a drilling fluid comprised of fatty acids, a metal compound, a film forming amine, and polymeric beads. The metal compound disclosed by Rayborn, specifically calcium carbonate, is a weighting agent ([0014]).

Rayborn is silent regarding the wt% of the calcium carbonate metal component.

Hernandez also discloses a drilling fluid comprised of a calcium carbonate weighting agent (column 1, line 4-7; column 2, lines 57-60). The weighting agent is further disclosed in amount of 25 wt% (Table 2, column 4). A sufficient amount of this metal component was added to the composition in order to adjust the density of the

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drilling fluid (column 3, lines 17-25). Therefore, since an amount of weighting agent of 25 wt% is adequate to properly improve a drilling fluid, it would have been obvious for Rayborn to also utilize this amount of calcium carbonate. This amount would intrinsically provide at least a 50% overbased composition in the lubricating composition.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Vasu Jagannathan
VASU JAGANNATHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700